

## FRST - Frostbite

### FRST-C      COMPLICATIONS

**OUTCOME:** The patient and/or family will understand the consequences of frostbite; and the complications associated with frostbite.

**STANDARDS:**

1. Explain that the severity of frostbite is associated with how deep the freeze is. No tissue is safe. This can involve the skin layers as well as the fat, muscle, blood vessels, lymphatics, nerves, and even the bones.
2. Discuss that frostbite is just like receiving a burn; and is categorized based upon the extent of the tissue injury.
  - a. First Degree: is a partial freeze of the skin. Clinical Appearance: Redness, swelling, possible peeling of skin about a week later. Symptoms: Periodic burning, stinging, aching, throbbing; excessive sweating in the area.
  - b. Second Degree: All layers of the skin have frozen. Clinical Appearance: Redness, significant swelling, blisters, black scabs, Symptoms: Numbness, heaviness of the affected area.
  - c. Third Degree: Skin and subcutaneous tissues are completely frozen. Clinical Appearance: Purplish blisters (blood-filled), dusky blue skin discoloration, death of the skin. Symptoms: Loss of sensation, area feels like “wood”. Later on, the area has significant burning and throbbing.
  - d. Fourth Degree: Complete involvement of skin, fat, muscle, bone. Clinical Appearance: Minimal swelling. The area is initially quite red, then becomes black. Symptoms: Occasional joint pain.
3. Emphasize the importance to avoid thawing and then refreezing the injury. This is very dangerous and can cause serious sequella.

### FRST-CUL      CULTURAL/SPIRITUAL ASPECTS OF HEALTH

**OUTCOME:** The patient/family will understand the impact and influences cultural and spiritual traditions, practices, and beliefs have on health and wellness.

**STANDARDS:**

1. Explain that the outcome of disease processes may be influenced by choices related to health and lifestyles, e.g., diet, exercise, sleep, stress management, hygiene, full participation in the medical plan. (Stoic Fatalism)
2. Discuss the potential role of cultural/spiritual traditions, practices and beliefs in achieving and maintaining health and wellness.

3. Explain that traditional medicines/treatments should be reviewed with the healthcare provider to determine if there are interactions with prescribed treatment.
4. Explain that the medical treatment plan must be followed as prescribed to be effective and that some medications/treatments take time to demonstrate effectiveness.
5. Discuss that traditions, such as sweat lodges, may affect some conditions in detrimental ways. Healing customs or using a traditional healer may have a positive effect on the patient's condition.
6. Refer to clergy services, traditional healers, or other culturally appropriate resources.

**FRST-DP     DISEASE PROCESS**

**OUTCOME:** The patient and/or family will understand how frostbite occurs the signs and symptoms of frostbite, and risk factors associated with frostbite.

**STANDARDS:**

1. Explain that frostbite, simply defined, is the freezing of the skin and/or the bodily tissues under the skin.
2. Discuss signs and symptoms of frostbite with the patient/family:
  - a. Mild frostbite (frostnip) affects the outer skin layers and appears as a blanching or whitening of the skin.
  - b. Severe frostbite: the skin will appear waxy-looking with a white, grayish-yellow or grayish-blue color.
  - c. Affected body parts will have no feeling (numbness) and blisters may be present.
  - d. The tissue will feel frozen or "wooden."
  - e. Other symptoms include swelling, itching, burning and deep pain as the area is warmed.
3. Discuss the pathophysiology of frostbite: the fluids in the body tissues and cellular spaces freeze and crystallize. This can cause damage to the blood vessels and result in blood clotting and lack of oxygen to the affected area.
4. Review with patient/family predisposing conditions to frostbite:
  - a. Exposure of the body to cold
  - b. Length of time a person is exposed to the cold
  - c. Temperature outside
  - d. Wind-chill factor
  - e. Humidity in the air
  - f. Wetness of clothing and shoes

- g. Ingestion of alcohol and other drug
  - h. High altitudes
- 5. Explain that frostbite can occur in a matter of minutes.
- 6. Discuss with patient/family that the most common parts of the body affected by frostbite include the hands, feet, ears, nose, and face.
- 7. Review with patient/family the medical conditions that make some at greater risk for frostbite:
  - a. The elderly and young
  - b. Persons with circulation problems
  - c. Those with a history of previous cold injuries
  - d. Those who ingest particular drugs, e.g., alcohol, nicotine and beta-blockers
  - e. Persons from southern/tropical climates exposed to cold weather conditions

**FRST-FU FOLLOW-UP**

**OUTCOME:** The patient and/or family will understand the seriousness of frostbite and the importance of follow up care.

**STANDARDS:**

- 1. Discuss the importance of follow up appointments after frostbite to determine if there is any permanent or ongoing damage.
- 2. Discuss the importance of keeping follow up appointments.
- 3. Discuss the procedures for obtaining follow up appointments.

**FRST-L LITERATURE**

**OUTCOME:** The patient and/or family will receive literature about frostbite, and important preventive measures.

**STANDARDS:**

- 1. Provide patient/family with literature on frostbite and prevention of frostbite.
- 2. Discuss the content of the literature.

**FRST-M MEDICATIONS**

**OUTCOME:** The patient/family will understand the use of medications to manage frostbite.

**STANDARDS:**

1. Explain to patient/family that the blistered areas may require topical medications applied during dressing changes as prescribed by provider.
2. Discuss appropriate medications available for acute and chronic pain.
3. Advise patient/family that a tetanus vaccination is necessary if not received in last 5–10 years.
4. Discuss the common and important side effects and drug interactions of medications prescribed.

**FRST-MNT MEDICAL NUTRITION THERAPY**

**OUTCOME:** The patient and family will have an understanding of the specific nutritional intervention(s) needed for treatment or management of this condition, illness, or injury.

**STANDARDS:**

1. Explain that Medical Nutrition Therapy (MNT) is a systematic nutrition care process provided by a Registered Dietitian (RD) that consists of the following:
  - a. Assessment of the nutrition related condition.
  - b. Identification of the patient's nutritional problem.
  - c. Identification of a specific nutrition intervention therapy plan.
  - d. Evaluation of the patient's nutritional care outcomes.
  - e. Reassessment as needed.
2. Review the basic nutrition recommendations for the treatment plan.
3. Discuss the benefits of nutrition and exercise to health and well-being.
4. Assist the patient/family in developing an appropriate nutrition care plan.
5. Refer to other providers or community resources as needed.

**FRST-N NUTRITION**

**OUTCOME:** The patient/family will understand the nutritional problems associated with frostbite.

**STANDARDS:**

1. Discuss that based on severity of the injury the need for replenishment of calories, fluids, protein, nitrogen and other nutrients may be essential.
2. Refer to a registered dietician as appropriate.

**FRST-P      PREVENTION**

**OUTCOME:** The patient/family will understand ways to prevent frostbite.

**STANDARDS:**

1. Discuss with the patient/family that the majority of frostbite cases are preventable, and that it is easier to prevent frostbite than to treat it.
2. Emphasize the importance of keeping clothing/socks dry. Wet clothing predisposes to frostbite.
3. Explain that it is important to minimize wind exposure. Wind proof clothing can be helpful. High winds increase heat loss from the body.
4. Discuss that it is important to wear loose, layered clothing (e.g., hat, gloves, loosely fitting layered clothing). Constrictive clothing increases the likelihood of frostbite as does immobilization and dependency of the extremities. Proper clothing for winter weather insulates from the cold, lets perspiration evaporate and provides protection against wind, rain and snow. Wear several layers of light, loose clothing that will trap air, yet provide adequate ventilation. This is better protection than one bulky or heavy covering.
5. Discuss the importance to stocking the vehicle appropriately for winter travel (e.g., blankets, gloves, hats).
6. Discuss that when in frostbite-causing conditions, dressing appropriately, staying near adequate shelter, and remaining physically active can significantly reduce the risk of suffering from frostbite.
7. Discuss the importance of avoiding alcohol and other drugs while participating in outdoor activities.
8. Review the sensations associated with overexposure to cold, e.g., sensations of intermittent stinging, burning, throbbing, and aching are all early signs of frostbite. Get indoors.
9. Discuss with patient/family the medical conditions that make some at greater risk for frostbite:
  - a.      The elderly and young
  - b.      Persons with circulation problems
  - c.      Those with a history of previous cold injuries
  - d.      Those who ingest particular drugs, e.g., alcohol, nicotine and beta-blockers
  - e.      Persons from southern/tropical climates exposed to cold weather conditions

**FRST-PM PAIN MANAGEMENT**

**OUTCOME:** The patient/family will understand how to manage the pain associated with the acute and chronic tissue damage caused from frostbite.

**STANDARDS:**

1. Discuss that there has been some evidence that aloe vera in a 70% concentration when applied topically may be helpful in pain management.
2. Discuss appropriate pain management plan with patient/family.

**FRST-TX TREATMENT**

**OUTCOME:** The patient and/or family will understand the management and treatment of frostbite.

**STANDARDS:**

1. Discuss the goal of treatment with the patient; prevention of further exposure to affected area(s), and management and prevention of complications.
2. Emphasize the need to have frostbite injuries re-warmed under medical supervision.
3. Explain that the patient needs to get to a warm place where the patient can stay warm after thawing. Refreezing can cause more severe tissue damage.
4. Review proper thawing process:
  - a. Use warm-to-the touch water 100°F (38°C.) For 30–45 minutes until a good color (flush) has returned to the entire area. Emphasize that this process may be painful, especially the final few minutes.
  - b. Leave the blisters intact. Cover with a sterile or clean covering if protection is needed to prevent rupturing of blisters.
  - c. Keep the affected part(s) as clean as possible to reduce the risk of infection.
  - d. Keep the affected area elevated above the level of the heart.
5. Emphasize the importance of having a current tetanus booster (within 5–10 years).
6. Review treatment modalities that are not deemed appropriate methods to treat frostbite:
  - a. Don't use dry heat (sunlamp, radiator, heating pad) to thaw the injured area.
  - b. Don't thaw the injury in melted ice.
  - c. Don't rub the area with snow.
  - d. Don't use alcohol, nicotine, or other drugs that may affect blood flow.

**FRST-WC    WOUND CARE**

**OUTCOME:** The patient/family will understand the necessity and procedure for proper wound care.

**STANDARDS:**

1. Explain the reasons to care appropriately for the wound, e.g., decreased infection rate, improved healing.
2. Explain the correct procedure for caring for this patient's wound.
3. Explain signs or symptoms that should prompt immediate follow-up, e.g., increasing redness, purulent discharge, fever, increased swelling/pain.
4. Detail the supplies necessary for the care of this wound (if any) and how/where they might be obtained.
5. Emphasize the importance of follow-up.
6. Demonstrate the necessary wound care techniques.